

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A vacuum fluorescent display comprising:
a cathode electrode for emitting electrons;
a grid electrode for extracting the electrons from said cathode electrode;
an anode electrode for accelerating the electrons extracted from said cathode electrode;
at least one envelope which accommodates said cathode electrode, said grid electrode, and said anode electrode in a vacuum space and has a display portion having light transmission properties;
a phosphor layer formed on an inner surface of the display portion of said envelope and adapted to emit light upon bombardment of the electrons accelerated by said anode electrode; and
a cap made of an X-ray shielding material and supported outside said envelope so as to surround the display portion of said envelope through a gap, said cap having a light exit surface from which the light emitted from said phosphor layer emerges through the display portion of said envelope and having a cylindrical-shaped bottom to cover the display portion of the envelope and a side surface of the envelope.

2. (Original) A display according to claim 1, wherein said cap is made of lead glass having light transmission properties.

3. (Original) A display according to claim 1, further comprising a cooling liquid sealed in the gap.

4. (Original) A display according to claim 1, wherein said cathode electrode contains carbon nanotubes.

5. (Original) A display according to claim 1, wherein said cap comprises
a cylindrical portion made of an X-ray shielding material containing lead glass having light transmission properties, and
a front surface glass member made of translucent lead glass having light transmission properties and fitted in one opening of said cylindrical portion corresponding to the display portion of said envelope.

6. (Original) A display according to claim 1, wherein said cap surrounds said envelope entirely.

7. (Original) A display according to claim 6, wherein said envelope has a stem in which a plurality of lead pins to be connected to said electrodes are buried and which has an outer diameter slightly larger than that of said envelope, and a portion between a tip of an opening of said cap and said envelope is sealed by the stem to form the gap.

8. (Original) A display according to claim 7, wherein said stem is made of an insulating elastic material.

9. (Currently Amended) A display according to claim 7, further comprising A vacuum fluorescent display comprising:

a cathode electrode for emitting electrons;

a grid electrode for extracting the electrons from said cathode electrode;

an anode electrode for accelerating the electrons extracted from said cathode electrode;

at least one envelope which accommodates said cathode electrode, said grid electrode, and said anode electrode in a vacuum space and has a display portion having light transmission properties,

wherein said envelope has a stem in which a plurality of lead pins to be connected to said electrodes are buried and which has an outer diameter slightly larger than that of said envelope, and a portion between a tip of an opening of said cap and said envelope is sealed by the stem to form the gap,

wherein said stem is made of an insulating elastic material;

a phosphor layer formed on an inner surface of the display portion of said envelope and adapted to emit light upon bombardment of the electrons accelerated by said anode electrode; and

a cap made of an X-ray shielding material and supported outside said envelope so as to surround the display portion of said envelope through a gap, said cap having a light exit surface from which the light emitted from said phosphor layer emerges through the display portion of said envelope,

wherein said cap surrounds said envelope entirely;

a cooling liquid sealed in the gap, and

a liquid reservoir formed in the stem to communicate with the gap.

10. (Currently Amended) A display according to claim 1, A vacuum fluorescent display comprising:

a cathode electrode for emitting electrons;

a grid electrode for extracting the electrons from said cathode electrode;

an anode electrode for accelerating the electrons extracted from said cathode electrode;

at least one envelope which accommodates said cathode electrode, said grid electrode, and said anode electrode in a vacuum space and has a display portion having light transmission properties;

a phosphor layer formed on an inner surface of the display portion of said envelope and adapted to emit light upon bombardment of the electrons accelerated by said anode electrode; and

a cap made of an X-ray shielding material and supported outside said envelope so as to surround the display portion of said envelope through a gap, said cap having a light exit surface from which the light emitted from said phosphor layer emerges through the display portion of said envelope,

wherein said envelope comprises a plurality of envelopes corresponding to a plurality of colors, and

 said cap surrounds display portions of the plurality of envelopes all together.

11. (New) A display according to claim 1, wherein the envelope comprises a cylindrical glass bulb, a circular plate fixed to a front surface opening of a glass valve and a glass stem fixed to a rear surface opening of the glass valve, and

 wherein the cylindrical-shaped bottom also covers the circular plate and the front surface of the glass valve.